THE MINERAL INDUSTRY OF

MACEDONIA

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In 1996, Macedonia's economy continued to show mixed results as an outcome of regional political instability and military conflict in the neighboring Republics of the former Yugoslavia. The continuing efforts by the Government of Macedonia to promote the economy's transition to a market-based system also meant that the final profile of the country's minerals industry is yet to be determined, given that major state subsidies that were granted to industry in the former Yugoslavia were abolished or significantly reduced from 1992 to 1996. Production results for the January to September period of 1996, compared with the same 9-month period of 1995, showed increases in the aggregated value of output in the following sectors: iron and steel production (49%); nonferrous metal ore mining, smelting and refining, and fabrication (11%, 24%, and 15%, respectively); and mining and quarrying of industrial minerals (5%). Production declines for this period were noted for coal output (2%); industrial minerals processing (21%); the output of basic chemicals (7%); the output of stone, sand, and gravel (8%); and the output of building materials (3%). The total value of industrial production for the 9-month period of 1996, compared with the same period in 1995, increased by 4% (Republic of Macedonia, 1997a). However, with respect to foreign trade and balance of payments, available results for the first 6 months of 1996 indicated the worst performance since 1991. Compared with the corresponding period in 1995, Macedonia's total exports in 1996 declined by 30%; total imports, on the other hand, declined by 2.8%. Despite difficulties associated with foreign trade, the Government of Macedonia continued to allow the country's economy to develop in a market-based context with as little Government intervention as possible (Foreign Broadcast Information Service, 1997). Following secession from Yugoslavia in early 1992, Macedonia encountered serious difficulties with respect to international recognition, owing to Greece's demand that the term "Macedonia" be applied only to the northern province of Greece bordering the former Yugoslav Republic of Macedonia. The political dispute with Greece over the "Macedonia" eponym resulted in a de facto trade embargo because of Greece's reported closure of its border to Macedonia coupled with the international economic sanctions placed against Serbia and Montenegro with which Macedonia has a common border. By the end of 1996 most major issues between Macedonia and its neighbors (Greece and Serbia and Montenegro viz à viz embargos) had been resolved, which permitted economic recovery to commence.

The Republic of Macedonia had been a major producer of minerals in the former Yugoslavia. The country's output of

major minerals in 1990 (the last year for which comparative statistical information was available) as a percent of total output for Yugoslavia, amounted to 12.3% for copper ore, and 36.9% for lead and zinc ore. Output of smelter and refined lead amounted to 25.6% and 26.7%, respectively, for the same period; silver amounted to 14.7%; and zinc smelter secondary and zinc primary and secondary refined output was 100% and 45.3%, respectively, of total production. Additionally, steel (electric furnace) production was 16.5% of total output. With respect to industrial minerals, Macedonia's production of bentonite, dolomite, gypsum, and pumice in 1990 amounted to 65.3%, 58.1%, 10.2%, and 48.7%, respectively, of the former Yugoslavia's total production. The country's production of lignite in 1990 represented 10.4% of former Yugoslavia's total output that year. Lignite was the only fossil fuel that Macedonia produced.

The dislocation of the former Yugoslavia's mineral industry and commerce in 1992 continued through the end of 1995 resulting in significant shortfalls in minerals production in Macedonia as well as in other former constituent republics. Although a primary concern of the Government of Macedonia was the issue of international recognition, apparently some effort continued to be directed at maintaining levels of industrial production that would ensure minimally acceptable levels of unemployment.

Activities in Macedonia's minerals industry in 1996 included the restart of operations at the Rudnici I Zelezarnica Skopje (Skopje steelworks). The 1-million-ton-per-year steel mill with capacitities to produce heavy plate, cold-and hot-rolled coil, as well as coated and galvanized coils, had been near complete closure during the 18 months of war in the neighboring Republics of the former Yugoslavia and Greece's trade blockade of Macedonia. Heavy plate production was restarted in May and was to be followed by the output of additional products, once sufficient quantities of scrap again become available from Bulgaria and other countries in the region (Metal Bulletin, 1996). The Government of Macedonia continued to be the majority stockholder in the Skopje steelworks in 1996, but also had been seeking potential buyers for the facility as part of its program of industrial denationalization.

The production table for Macedonia was compiled from the most recently available data supplied by the country's Statistical Directorate (Republic of Macedonia, 1997b). Additionally, production estimates for mineral commodities for 1992-96, for which recent official data has been lacking, were based on data presented in a variety of statistical publications of the former Yugoslavia through 1991. The most important of these

publications was "Industrijska Proizvodnja," an annual statistical compendium published in Belgrade through 1990 that presented production data by constituent federal republics, as well as by total output for the former Yugoslavia. (See table 1.)

Owing to the virtual trade embargo that developed around Macedonia, detailed official information concerning the foreign trade of mineral commodities for 1995 and 1996 remained largely unavailable.

Table 2 lists the apparent administrative bodies as well as subordinate production units of the main branches of the country's mineral industry in 1996. (See table 2.)

Macedonia's inland system of ways and communications consisted of railroads and highways and waterways. Although information concerning the total lengths of the railroad and inland waterway systems was not yet available, the highway and road system reportedly consisted of 10,591 kilometers (km) of paved, gravel, and earth-surfaced road, of which 5,091 km was

paved, 1,404 km was gravel, and 4,096 km was earth surfaced. The country was entirely landlocked and possessed neither a merchant marine fleet nor pipelines for carriage of natural gas and petroleum.

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${\bf TABLE~1}$ MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/2/

(Metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996 e/
METALS					
Aluminum: Metal, ingot, primary and secondary	4,000	2,000	5,000 r/ 3/	3,700 r/3/	4,000
Cadmium, smelter output kilograms	110	100	100	100	100
Chromite:					
Ore, gross weight	6,000	5,000	5,000	5,000	5,000
Concentrate (produced largely from imported ores)	10,000	3,000	3,000	3,000	3,000
Copper: Mine and concentrator output:					
Ore, gross weight thousand tons	3,000	2,500	2,000	2,000	2,000
Cu content of ore	7,200 r/	5,800	6,500	6,500	6,500
Concentrate, gross weight	30,000	25,000	20,000	20,000	20,000
Iron and steel:					
Iron ore:	20,000	20,000	20.000	20.000	20,000
Gross weight thousand tons	20,000	20,000	20,000	20,000	20,000
Fe content of ore	1,000	1,000	1,000	1,000	1,000
Concentrate	15,000	15,000	15,000	15,000	15,000
Pellets	10,000	10,000	10,000	10,000	10,000
Agglomerate	5,000	5,000	5,000	5,000	5,000
Metal:					
Ferroalloys: Ferrochromium. low C e/	2 060	4 200	2 160	2 200	2 700
Ferrochromium, low C e/ Ferrosilicochromium	3,960 1,500	4,380	3,160	3,200	3,780
Ferrosilicon		20.000	 59.740	 57 200 #/	 57 220
	30,000	20,000	58,740	57,200 r/	57,220
Silicon Total	1,000	1,000	1,000 62,900 r/ 3/	1,000 61,400 r/ 3/	1,000 62,000
Pig iron	36,460 20,000	25,380	20,000	20,000	20,000
Steel, crude:	20,000	20,000	20,000	20,000	20,000
From oxygen converters	42,000	37,000	30,000	30,000	30,000
From electric furnaces	160,000	100,000	55,000 r/	60,000	60,000
Total	202,000	137,000	85,000 r/	90,000	90,000
Semimanufactures	20,000	20,000	91,000	65,000	65,000
Lead:	20,000	20,000	91,000	03,000	63,000
Mine and concentrate output, ore gross weight (Pb, Zn ore)	400,000	400,000	900,000 r/	900,000 r/	900,000
Smelter, primary and secondary	10,000	10,000	22,000 r/	23,000 r/	23,000
Refined, primary and secondary	8,000	8,000	21,000	22,500	22,000
Nickel: Metal, Ni content of FeNi	450	3,500	3,500	3,500	3,000
Silver kilograms	10,000	10,000	10,000	10,000	10,000
Zinc: Metal:	10,000	10,000	10,000	10,000	10,000
Zn, smelter, primary	30,000	30,000	50,000 r/	50,000 r/	50,000
Zn, refined, primary and secondary:	30,000	30,000	30,000 1/	20,000 1/	30,000
Smelter	7,000	7,000	7,000	7,000	7,000
Electrolytic	25,000	25,000	43,000 r/	40,000 r/	40,000
INDUSTRIAL MINERALS	,,,,,,	,	,	,	,
Cement 3/ thousand tons	516 r/	499 r/	486 r/	524 r/	550
Clays, bentonite 3/	40,000	35,000	30,000	30,000	30,000
Diatomite	5,000	5,000	5,000	5,000	5,000
Feldspar	20,000	15,000	15,000	15,000	15,000
Gypsum:		,	*	,	,
Crude	30,000	30,000	25,000	25,000	25,000
Calcined	7,000	7,000	5,000	5,000	5,000
Lime	20,000	20,000	20,000	20,000	20,000
Pumice and related materials, volcanic tuff	100,000	75,000	75,000	75,000	75,000
Sand and gravel, excluding glass sand thousand cubic meters	130	130	130	130	130
Stone, excluding quartz and quartzite, dimension, crude:					
Ornamental square meters	300,000	200,000	266,700 r/3/	192,300 r/3/	200,000
Crushed and brown, n.e.s. thousand cubic meters	400	400	400	400	400
Other cubic meters	10,000	10,000	13,100 r/3/	12,100 r/3/	10,000
Sulfur, byproduct of metallurgy thousand tons	6	6	6	6	6
Talc:	-	-	-	-	-
Crude	15,000	10,000	10,000	10,000	10,000
Washed	10,000	7,000	7,000	7,000	7,000
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See footnotes at end of table.

TABLE 1--Continued MACEDONIA: APPARENT PRODUCTION OF MINERAL COMMODITIES 1/2/

(Metric tons unless otherwise specified)

Commodity		1992	1993	1994	1995	1996 e/
MINERAL FUELS AND I	RELATED MATERIALS					
Lignite 3/	thousand tons	6,494 r/	7,706 r/	6,830 r/	6,800	6,500
Petroleum refinery products	thousand 42-gallon barrels	10,000	8,000	8,000	8,000	8,000

e/ Estimated. r/ Revised.

TABLE 2 MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

			Annual
Commodity	Major operating companies 1/	Location of main facilities	capacity e/
Cement	Azbestcementa "Usje" Preduzece za Proizvodnju Cementa	Plant at Skopje, Macedonia	2,190
Chromite, concentrate	Jugohrom, Hemijsko-Elektrometakurski Kombinat	Concentrator at Radusa, Macedonia	150
Copper ore	Bucim, Rabotna Organizacija za Rudarstvo i Metalurgija za Baker	Mine and mill at Bucim, near Radovis, Macedonia	7,000
Ferroalloys	Jugohrom, Hemijsko-Elektrometalurski Kombinat	Plant at Jegunovce, Macedonia	80
Iron ore	Skopje, Rudnici i Zeljezarnica Skopje	Mines at Tajmiste, Demir Hisar, and Damjan, Macedonia	1,000
Lead-zinc ore	Prepobotuvacki, Kombinat Zletovo-Sasa: Sase, Rudnici za Olovo i Cink	Mine and mill near Kamenica, Macedonia	300
Do.	Zletovo, Rudnici za Olovo i Cink	Mine and mill near Probistip, Macedonia	700
Lead metal	Zletovo, Topilnica za Cink i Olovo	Imperial smelter at Titov Veles, Macedonia	40
Do.	do.	Refinery at Titov Veles, Macedonia	40
Nickel:			
Ore	Feni-Rudnici i Industrija za Nikel, Celik i Antimon	Mine and opencast mine near Kavadarci, Macedonia	2,300
Metal	do.	Ferronickel plant at Kavadarci, Macedonia	161
Pig iron	Skopje, Rudnici i Zeljezarnica Skopje	5 Elkem electric furances at Skopje, Macedonia	430
Steel, crude	do.	Plant at Skopje, Macedonia	980
Zinc metal	Zletovo, Topilnica za Cink i Olovo	Imperial Smelter plant and refinery at Titov Veles, Macedonia	65

^{1/} Nickel in ferronickel.

^{1/} Table includes data available through June 1997.

^{2/} In addition to commodities listed, common clay and diatomite also are produced, but available information was inadequate to make reliable estimates of output levels.

^{3/} Reported figure.